**Introduction:** Lymph node is the site of antigen-processing. Recently, according to the discovery of tumor-antigen in malignant melanoma, clinical application of anti-tumor immunity against malignant neoplasm has been improved. However, the existence of anti-tumor immunity in soft tissue sarcoma has not been proved. The purpose of the present study is to demonstrate the existence of anti-tumor immunity in soft tissue sarcoma through the morphometric study of the swollen lymph nodes without lymph node metastasis and the characterization of their tumor-infiltrating lymphocytes.

**Materials and methods: Morphotometric study of lymph node:** This study includes 9 cases of soft tissue sarcomas (4 MFH, 2 epithelioid sarcoma, 1 liposarcoma, 1 malignant granular cell tumor, 1 malignant Triton tumor), which showed lymph node swelling without lymph node metastasis. Specimens were obtained from inguinal lesion in six, axillary lesions in two, and subcutis in one. The size of the swollen lymph node ranges from one to 4 cm in diameter. The specimens were fixed with formalin, embedded in paraffin, and continuous microthin sections were made. For the discrimination of T-cell area, B-cell area, and sinus, hematoxylin-eosin stain and immunohistochemical staining for CD3, CD4, CD8, CD20, CD68, and S-100 protein were performed. These areas were measured, and the proportion of these areas to their total areas was calculated. Control studies were performed for three cases of malignant melanomas with unknown primary site showing lymph node swelling without lymph node metastasis. Formalin-fixed, paraffin-embedded, continuous microthin sections were made. Hematoxylin-eosin stain and immunohistochemical staining for CD3, CD4, CD8, CD20, CD68, CD56, TIA-1, granzyme B, and S-100 protein were performed. Furthermore, double immunohistochemical staining for LCA and TIA-1, and LCA and granzyme B were performed. The population of infiltrating cells was compared with 10 cases of soft tissue sarcomas without lymph node swelling.

**Results:** In the lymph nodes of soft tissue sarcoma showing lymph node swelling without metastasis, the proportions of T-cell area, sinus, and B-cell areas were 36±13%, 12±7%, 9±12%, respectively. Histologically, T-zone hyperplasia was found in seven cases including two cases showing sinus histiocytosis. Follicular hyperplasia was found only in one case. On the other hand, the proportion of these areas in the lymph node of malignant melanoma with unknown primary site was 44±7%, 8±9%, 4±3%, respectively. Tumor-infiltrating T-cell positive for TIA-1 and granzyme B were observed in most of the cases with lymph node swelling.

**Discussions:** Lymph nodes are composed of T-cell area (paracortex), B-cell area (cortex), sinus, and medulla. Reactive lymphoid hyperplasia is classified into paracortical hyperplasia (T-zone hyperplasia), follicular hyperplasia (B-cell hyperplasia), sinus histiocytosis, and medullary hyperplasia according to the site of hyperplasia (1). T-cell area is an antigen-presenting site of dendritic cells to T-cells. In these cases of soft tissue sarcoma showing lymph node swelling without lymph node metastasis, seven cases out of nine showed T-zone hyperplasia similar to those of malignant melanoma. These results support the role of lymph node as a director of anti-tumor immunity. Moreover, these cases showed lymphocyte-infiltration demonstrating immunohistochemically TIA-1 and granzyme B, into and around the tumor. TIA-1 is a marker for lymphocytes possessing cytolytic potential (2). Granzyme B can be used as a marker for NK cells and cytotoxic T-cells (3).

**Acknowledgements:** We thank Prof. M. Yamakawa (First Department of Pathology, Yamagata University School of Medicine, Japan) for providing some antibodies, and Dr. K. Okada (Department of Orthopaedic Surgery, Akita University School of Medicine, Japan) for donating surgical specimens.

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